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PATENT APPLICATION
Docket No.: 3276.1000-000

1644

#10 GM 9/14/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Johannes Gerdes, Thomas Scholzen, Elmar Endl, Claudia Wohlenberg, Bettina Baron-Luhr, Margrit Kernbach né Hahn, Patricia Prilla, Johanna Suwinski and Rolf Knippers

Application No.: 09/937,649 Group Art Unit: 1644

Filed: January 28, 2002 Examiner: M. Haddad

For: MONOCLONAL ANTIBODIES AGAINST HUMAN PROTEIN McM3, PROCESS FOR THEIR PRODUCTION, AND THEIR USE

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202

on 9-6-02 Sandra Jarmal
Date Signature

Sandra Jarmal
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REPLY TO RESTRICTION REQUIREMENT

Assistant Commissioner for Patents

P.O. Box 2327

Arlington, VA 22202

Sir:

Responsive to the Restriction Requirement dated August 8, 2002, the claims of Group I (Claims 25-31, 39 and 43-47), drawn to a monoclonal antibody specific for human Mcm3, a hybridoma, pharmaceutical composition and a kit, are elected for prosecution. Applicants reserve the right to file a continuing application or take such other appropriate action as deemed necessary to protect the non-elected inventions. Applicants do not hereby abandon or waive any rights in the non-elected inventions.

The requirement is being traversed for the reasons set forth in detail below.

The Examiner contends that the inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the

same or corresponding special technical features. In particular, the Examiner alleges that the invention of Group I lacks a special technical feature that defines a contribution over Tsuruga *et al.* (*Biochem. Biophys. Research Comm.*, 236:118-125 (1997)) in view of U.S. Patent No. 6,156,500 because "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to use the HsMcm3 peptide taught by Tsuruga *et al.* to make monoclonal antibodies taught by the '500 patent." Applicants respectfully disagree that the inventions listed as Groups I-IV do not share a special technical feature over the cited art.

Applicants respectfully submit that the combination of the Tsuruga *et al.* article and the '500 patent is improper because the Examiner has not identified a suggestion in the prior art of the desirability of the proposed combination of references. Combining the elements of separate references which do not themselves suggest the combination necessary to obtain a claimed invention is generally improper. ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984).

Notwithstanding the above, a *prima facie* case of obviousness is established only if the teachings of the cited art would have suggested the claimed invention to one of ordinary skill in the art with a reasonable expectation of successfully achieving the claimed results. In re Vaeck, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). Both the suggestion and the reasonable expectation of success must be found in the prior art, not Applicants' disclosure. Id.

If a compound is claimed, a *prima facie* case of obviousness is based upon structural similarity, i.e., an established structural relationship between a prior art compound and the claimed compound. In re Deuel, 34 U.S.P.Q.2d 1210, 1214 (Fed. Cir. 1995). Thus, a key issue is whether the teachings of the cited art had established, to a reasonable degree of certainty, the claimed compound (monoclonal antibody specific for human Mcm3).

It is agreed that Tsuruga *et al.* teach a polyclonal antibody against HsMcm3. However, polyclonal antibodies are structurally and functionally different from monoclonal antibodies. In particular, polyclonal antibodies do not possess the structural and functional specificity of monoclonal antibodies. A polyclonal antibody can bind a multiplicity of different epitopes on the immunizing antigen, while monoclonal antibodies bind to a specific epitope. Accordingly, the monoclonal antibodies of the present invention are structurally and functionally different from the polyclonal antibody against HsMcm3 taught by Tsuruga *et al.*

The '500 patent does not cure the deficiencies of the Tsuruga *et al.* article. The '500 patent is cited by the Examiner as teaching "methods for the production of antibodies capable of specifically recognizing one or more differentially expressed or pathway gene epitopes" and the use of the antibodies "in the detection of a fingerprint, target, or pathway gene in a biological sample". "Pathway genes" are defined in the '500 patent "via the ability of their products to

interact with other gene products involved in cardiovascular disease" (col. 5, lines 65-67). "Fingerprint genes" are defined in the '500 patent as referring to "differentially expressed gene[s] whose expression pattern may be utilized as part of a prognostic or diagnostic cardiovascular disease evaluation, or which, alternatively, may be used in methods for identifying compounds useful for treatment of cardiovascular disease" (col. 5, lines 52-57). "Target genes" are defined in the '500 patent as referring to "differentially expressed gene[s] involved in cardiovascular disease such that modulation of the level of target gene expression or of target gene product activity may act to ameliorate a cardiovascular disease condition" (col. 5, lines 57-61). No where is it taught in the '500 patent that human Mcm3 is a pathway gene product that interacts with gene products involved in cardiovascular disease or that antibodies against human Mcm3 can be used in prognostic or diagnostic cardiovascular disease evaluation or in the detection of a fingerprint, target or pathway gene in a biological sample. Importantly, the '500 patent does not teach or suggest monoclonal antibodies against human Mcm3. The '500 patent does not even mention human Mcm3.

Accordingly, the teachings of the cited references would not have established, to a reasonable degree of certainty, the monoclonal antibodies specific for human Mcm3 of the present invention. The cited references, either alone or in combination, would not have reasonably suggested a monoclonal antibody specific for human Mcm3 to one of ordinary skill in the art, at the time the invention was made, with a reasonable expectation of success. As such, the special technical feature common to each of Groups I-IV is a monoclonal antibody specific for human Mcm3.

For the foregoing reasons, withdrawal of the restriction requirement is respectfully requested.

Respectfully submitted,

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